

Appendix D ñ

Proposed Conservation Measures

for

Arizona BLM Statewide LUP Amendment and EA

for Fire, Fuels, and Air Quality Management

1.0 Conservation Measures for Fire Management Activities

1.1 Wildland Fire Suppression (FS)

The following Conservation Measures will be implemented during fire suppression operations unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Each Conservation Measure has been given an alphanumeric designation for organizational purposes (*e.g.*, FS-1). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

- FS-1** Protect known locations of habitat occupied by Federally listed species. Minimum Impact Suppression Tactics (M.I.S.T.) will be followed in all areas with known Federally protected species or habitat [Appendix U, *Interagency Standards for Fire and Aviation Operations 2003*, or updates].
- FS-2** Resource Advisors will be designated to coordinate natural resource concerns, including Federally protected species. They will also serve as a field contact representative (FCR) responsible for coordination with the USFWS. Duties will include identifying protective measures endorsed by the Field Office Manager, and delivering these measures to the Incident Commander; surveying prospective campsites, aircraft landing and fueling sites; and performing other duties necessary to ensure adverse effects to Federally protected species and their habitats are minimized. On-the-ground monitors will be designated and used when fire suppression activities occur within identified occupied or suitable habitat for Federally protected species.
- FS-3** All personnel on the fire (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the conservation measures designed to minimize or eliminate take of the species present. This information is best identified in the incident objectives.
- FS-4** Permanent road construction will not be permitted during fire suppression activities in habitat occupied by Federally protected species. Construction of temporary roads is approved only if necessary for safety or the protection of property or resources, including Federally protected species habitat. Temporary road construction should be coordinated with the USFWS, through the Resource Advisor.
- FS-5** Crew camps, equipment staging areas, and aircraft landing and fueling areas should be located outside of listed species habitats, and preferably in locations that are disturbed. If camps must be located in listed species habitat, the Resource Advisor will be consulted to ensure habitat damage and other effects to listed species are minimized and documented. The Resource Advisor should also consider the potential for indirect effects to listed species or their habitat from the siting of camps and staging areas (*e.g.*, if an area is within the water flow pattern, there may be indirect effects to aquatic habitat or species located off-site).

- FS-6** All fire management protocols to protect Federally protected species will be coordinated with local fire suppression agencies that conduct fire suppression on BLM-administered lands to ensure that the agency knows how to minimize impacts to Federally protected species in the area.
- FS-7** The effectiveness of fire suppression activities and Conservation Measures for Federally protected species should be evaluated after a fire, when practical, and the results shared with the USFWS and AGFD. Revise future fire suppression plans and tactical applications as needed and as practical.

1.2 Fuels Treatments (prescribed burning and other fuels management) (FT)

The following Conservation Measures **are mandatory** when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological):

- FT-1** Biologists will be involved in the development of prescribed burn plans and vegetation treatment plans to minimize effects to Federally protected species and their habitats within, adjacent to, and downstream from proposed project sites. Biologists will consider the protection of seasonal and spatial needs of Federally protected species (*e.g.*, avoiding or protecting important use areas or structures and maintaining adequate patches of key habitat components) during project planning and implementation.
- FT-2** M.I.S.T. will be followed in all areas with known Federally protected species or habitats.
- FT-3** Pre-project surveys and clearances (biological evaluations/assessments) for Federally protected species will be required for each project site before implementation. All applicable Conservation Measures will be applied to areas with unsurveyed suitable habitat for Federally protected species, until a survey has been conducted by qualified personnel to clear the area for the treatment activity.
- FT-4** Use of motorized vehicles during prescribed burns or other fuels treatment activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, washes, and temporary fuelbreaks or site-access routes. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after the prescribed burn or fuels treatment project is completed.
- FT-5** As part of the mandatory fire briefing held prior to prescribed burning, all personnel (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the Conservation Measures designed to minimize or eliminate take of the species present.

1.3 Rehabilitation and Restoration (RR)

- RR-1** When rehabilitating important areas for Federally listed species that have been damaged by fire or other fuels treatments, the biologist will give careful consideration to minimizing short-term and long-term impacts. Someone who is familiar with fire impacts and the needs of the affected species will contribute to rehabilitation plan development. Appropriate timing of rehabilitation and spatial needs of Federally listed species will be addressed in rehabilitation plans.
- RR-2** Seed from regionally native or sterile non-native species of grasses and herbaceous vegetation will be used in areas where reseeding is necessary following ground disturbance to stabilize soils and prevent erosion by both wind and water.
- RR-3** Sediment traps or other erosion control methods will be used to reduce or eliminate influx of ash and sediment into aquatic systems.
- RR-4** Use of motorized vehicles during rehabilitation or restoration activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, or washes, and to temporary access roads or fuelbreaks created to enable the fire suppression, prescribed burn, or

fuels treatment activities to occur. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after rehabilitation or restoration activities are completed.

- RR-5** All temporary roads, vehicle tracks, skid trails, and off-road vehicle (ORV) trails resulting from fire suppression and the proposed fire management activities will be rehabilitated (water bars, etc.), and will be closed or made impassible for future use.
- RR-6** Burned area emergency rehabilitation (BAER) activities and long-term restoration activities should be monitored, and the results provided to the USFWS and AGFD. Section 7 consultation for BAER activities will be conducted independently, if necessary.
- RR-7 (Recommended)** Develop public education plans that discourage or restrict fires and fire-prone recreation uses during high fire-risk periods. Develop brochures, signs, and other interpretive materials to educate recreationists about the ecological role of fires, and the potential dangers of accidental fires.

2.0 Conservation Measures For Fire Management Activities In Riparian and Aquatic Habitats (RA)

2.1 Wildland Fire Suppression and Rehabilitation

The following Conservation Measures will be implemented during fire suppression operations in riparian, wetland, or aquatic habitats, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS. The BLM's 1987 policy statement on riparian area management defines a riparian area as an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.¹

- RA-1** During wildfire suppression, apply M.I.S.T. within riparian areas. Fire suppression actions in riparian areas should be prioritized to minimize damage to stands of native vegetation from wildfire or suppression operations. To the extent possible, retain large, downed woody materials and snags that are not a hazard to firefighters.
- RA-2** Fire suppression and rehabilitation in riparian corridors will be coordinated with the Resource Advisor or qualified biologist approved by BLM.
- RA-3** Site-specific implementation plans that include project areas with Federally protected aquatic or riparian-obligate species will specify fire management objectives and wildland fire suppression guidance, taking into account the special concerns related to these species.
- RA-4** In riparian areas, use natural barriers or openings in riparian vegetation where possible as the easiest, safest method to manage a riparian wildfire. Where possible and practical, use wet firebreaks in sandy overflow channels rather than constructing firelines by hand or with heavy equipment.
- RA-5** Construction or development of a crossing for motorized vehicles across a perennial stream will not be permitted, unless an established road already exists or where dry, intermittent sections occur.
- RA-6** Avoid the use of fire retardants or chemical foams in riparian habitats or within 300 feet of aquatic habitats, particularly sites occupied by Federally protected species. Apply operational guidelines as stated in the *Interagency Standards for Fire and Fire Aviation Operations 2003* (or

updates), iEnvironmental Guidelines for Delivery of Retardant or Foam Near Waterways, Chapter 8 (pp. 8-13 through 8-15).

- RA-7** Priority for placement of fire camps, fire staging areas, and aircraft landing or refueling sites will be outside riparian areas or river/stream corridors.
- RA-8** When using water from sources supporting Federally protected species, care must be taken to ensure adverse impacts to these species are minimized or prevented. Unused water from fire abatement activities will not be dumped in sites occupied by Federally protected aquatic species to avoid introducing non-native species, diseases, or parasites.
- RA-9** If water is drafted from a stock tank or other body of water for fire suppression, it will not be refilled with water from another tank, lakes, or other water sources that may support non-native fishes, bullfrogs, crayfish, or salamanders.
- RA-10** Use of containment systems for portable pumps to avoid fuel spills in riparian or aquatic systems will be required.
- RA-11 (Recommended)** Develop and implement restoration plans for affected riparian or aquatic areas, including long-term monitoring, to document changes in conditions in the riparian zone and watershed that maintain flood regimes and reduce fire susceptibility. Monitor stream water quality and riparian ecosystem health to determine effects of wildfire and fire management activities. Coordinate efforts and results with the USFWS and AGFD.

2.2 Fuels Treatments (prescribed fire; mechanical, chemical, and biological treatments)

The following Conservation Measures **are mandatory** when implementing wildland fires use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological) within riparian, wetland, or aquatic habitats.

- RA-12** All Conservation Measures for wildland fire suppression (**RA-1 to RA-11, Section 2.1**) also apply to fuels treatment activities (prescribed fire; mechanical, chemical, and biological treatments) in riparian, wetland, and aquatic habitats.
- RA-13** Fire management treatments within or adjacent to riparian and aquatic habitats will be designed to provide long-term benefits to aquatic and riparian resources by reducing threats associated with dewatering and surface disturbance, or by improving the condition of the watershed and enhancing watershed function.
- RA-14** For priority fire/fuels management areas (*e.g.*, WUIs) with Federally protected species or designated critical habitat downstream, BLM biologists and other resource specialists, as appropriate, in coordination with USFWS and AGFD, will determine:
 - A)** The number of acres and the number of projects or phases of projects to occur within one watershed per year.
 - B)** An appropriately-sized buffer adjacent to perennial streams in order to minimize soil and ash from entering the stream.
 - C)** Where livestock grazing occurs in areas that have been burned, specialists will determine when grazing can be resumed. Such deferments from grazing will only occur when necessary to protect streams from increased ash or sediment flow into streams.¹

¹ The Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, Exhibit 4-2, BLM supplemental guidance, page 5 of 9 (<http://fire.r9.fws.gov/ifcc/ESR/handbook/4PolicyGuidance.htm>) establishes the following policy for livestock exclusion following burns:

Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedlings and use of these areas should not be permitted until the vegetation recovers or is established. Both re-vegetated and, burned but not re-vegetated

If agreement cannot be reached or treatment will not meet fuel reduction objectives, BLM will re-initiate consultation.

3.0 Species Specific Conservation Measures

In addition to the general Conservation Measures listed in **Sections 1.0** and **2.0**, the following species-specific Conservation Measures will be applied during wildfire suppression to the extent possible, and will be required during fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

3.1 Amphibians [Chiricahua leopard frog (FT); Relict leopard frog (FC)]

- AM-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**).
- AM-2** For fire management sites with habitat for the Chiricahua leopard frog, unsurveyed sites will be considered occupied unless surveyed prior to project implementation.
- AM-3** Install sediment traps, as determined by a Resource Advisor or qualified biologist approved by BLM, upstream of tanks and ponds occupied by Chiricahua leopard frogs in order to minimize the amount of ash and sediment entering the water. Consultation with a qualified biologist during the planning phase will aid in determining sediment trap installation requirements (see Conservation Measures FT-1 and FT-3).
- AM-4** All personnel performing fire management activities at any creek crossing will be informed of the potential presence of Chiricahua leopard frogs, their status, and the need to perform their duties to avoid impacts to the frog and its habitat.
- AM-5** Except as needed in emergency situations to abate immediate fire threat or loss of life or property, no water will be drafted for fire suppression from bodies of water known to be occupied by the Chiricahua leopard frog.

areas, will be closed to livestock grazing for at least two growing seasons following the season in which the wildfire occurred to promote recovery of burned perennial plants and/or facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures will be made a condition or term on the grazing license or permit through the issuance of grazing decision (see 43 CFR 4160). Livestock closures for less than two growing seasons may be justified on a case-by-case basis based on sound resource data and experience. Livestock management following seedling establishment and/or burned area recovery should maintain both non-native and/or native species to meet land use (including Standards for Rangeland Health and Guidelines for Grazing Management) or activity plan objectives.

Our authority to make these types of changes is in the regulations at 43 CFR 4110.3-3(b).

3.2 Birds

3.2.1 Cactus ferruginous pygmy-owl (FE, Proposed CH)

- FP-1** Treatment of riparian habitat, Sonoran desert/desertscrub, or mesquite-invaded grasslands under 4,000 feet in elevation that may support nesting cactus ferruginous pygmy owls will only occur during the non-nesting season of August 1 to January 31, unless pre-project surveys indicate the area does not support pygmy-owls or mitigation plans approved by the USFWS have alleviated negative consequences.
- FP-2** Develop mitigation plans in coordination with the USFWS for fuels treatment projects (prescribed fire; vegetation treatments) that may adversely affect cactus ferruginous pygmy-owls or their habitat. Mitigation plans for prescribed fire shall limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.
- FP-3 (Recommended)** To the extent possible, maintain habitat features necessary to support breeding populations of the pygmy-owl within their historic range and review ongoing fire management activities for effects on essential habitat features needed by cactus ferruginous pygmy-owls. Modify activities, where necessary, to sustain the overall suitability of the habitat for the owls. Priority will be given to activities in or near occupied or recently (w/in the last 10 years) occupied habitat.

3.2.2 California brown pelican (FE)

- BP-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (Section 2.0).

3.2.3 California Condor (FE; 10(j) species)

The following Conservation Measures apply to BLM-administered lands within the designated 10(j) area for California condors:

- CC-1** All helicopter dip tanks will be covered when not in use.
- CC-2** Any presence of condors in the project area will be recorded and reported immediately to the Resource Advisor.
- CC-3** If condors arrive at any area of human activity associated with fire suppression or fuels treatment projects (wildland fire use, prescribed fire, vegetation treatments), the birds will be avoided. The assigned Resource Advisor or a qualified wildlife biologist approved by BLM will be notified, and only permitted personnel will haze the birds from the area.
- CC-4** All camp areas will be kept free from trash.
- CC-5** Aircraft use along the Vermilion Cliffs or sites where condors are attempting to breed or roost will be minimized.
- CC-6** The Resource Advisor will contact the Peregrine Fund daily (at 520-606-5155 or 520-380-4667) to check on locations of condors during fire suppression or fuels treatment activities involving aviation. This information will be communicated to the Incident Commander and aviation personnel.
- CC-7** If any fire retardant chemicals must be used in areas where condors are in the vicinity (see **CC-6**), the application area will be surveyed and any contaminated carcasses will be removed as soon as practical to prevent them from becoming condor food sources.

- CC-8** Aircraft will remain 400 meters from condors in the air or on the ground unless safety concerns override this restriction. If airborne condors approach aircraft, aircraft will give up airspace to the extent possible, as long as this action does not jeopardize safety.
- CC-9** Smoke from wildland fire use and prescribed fire projects will be managed to minimize negative effects to condor breeding. A potential wildland fire use event will not be initiated, or an existing event will be modified or terminated, to prevent or stop significant amounts of smoke, or smoke that will remain in place for an extended period of time, or chronic smoke events, from occurring in area(s) where condors are attempting to breed.
- CC-10** BLM will adhere to the air quality standards set by the Arizona Department of Environmental Quality.

3.2.4 Northern aplomado falcon (FE)

- AF-1** If aplomado falcons are reestablished or are discovered on public lands, and they nest in a fuels management project area, BLM will implement temporary closures to human access and project implementation (wildland fire use, prescribed burning, vegetation treatments) within ½ mile of nest sites during the breeding season. Wildland fire use and prescribed burning will be conducted in a manner to ensure nest sites are more than ½ mile from downwind smoke effects.

3.2.5 Southwestern willow flycatcher (FE)

- WF-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**).
- WF-2** Except where fires are active in occupied habitat, minimize unnecessary low-level helicopter flights during the breeding season (April 1 ñ September 30). Approach bucket dip sites at a 90-degree direction to rivers to minimize flight time over the river corridor and occupied riparian habitats. Locate landing sites for helicopters at least ½ mile from occupied sites to avoid impacts to willow flycatchers and their habitat.
- WF-3** Minimize use of chainsaws or bulldozers to construct firelines through occupied or suitable habitat except where necessary to reduce the overall acreage of occupied habitat or other important habitat areas that would otherwise be burned.
- WF-4** Implement activities to reduce hazardous fuels or improve riparian habitats (prescribed burning or vegetation treatments) within occupied or unsurveyed suitable habitat for southwestern willow flycatchers only during the non-breeding season (October 1 to March 31).
- WF-5** Avoid developing access roads that would result in fragmentation or a reduction in habitat quality. Close and rehabilitate all roads that were necessary for project implementation (see **RR-5**).
- WF-6** Prescribed burning will only be allowed within ½ mile of occupied or unsurveyed suitable habitat when weather conditions allow smoke to disperse away from the habitat when birds may be present (breeding season of April 1 ñ September 30).
- WF-7** Vegetation treatment projects adjacent to occupied or unsurveyed suitable habitat will only be conducted when willow flycatchers are not present (October 1 ñ March 31).

3.2.6 Yuma clapper rail (FE)

- CR-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**).
- CR-2** Any prescribed fire or vegetation treatment project in occupied or suitable marsh habitat would only occur between September 1 and March 15 to avoid the Yuma clapper rail breeding and molting seasons.

- CR-3** Mechanical removal of overstory habitat (*Tamarisk*) could occur as early as August 15, after the breeding season for Yuma clapper rails.
- CR-4** Herbicide application would not occur in Yuma clapper rail habitat and drift-inhibiting agents would be used to assure that the herbicide does not enter adjacent marsh areas.

3.2.7 Bald eagle (FT)

- BE-1** No human activity within ½ mile of known bald eagle nest sites between December 1 and June 30.
- BE-2** No tree cutting within ½ mile of known nest trees.
- BE-3** No human activity within ½ mile of known bald eagle winter roost areas between October 15 and April 15.
- BE-4** No tree cutting within the area immediately around winter roost sites as determined by BLM biologists.
- BE-5** No helicopter or aircraft activity or aerial retardant application within ½ mile of bald eagle nest sites between December 1 and June 30 or winter roost sites between October 15 and April 15.
- BE-6** Conduct prescribed burn activities outside of nesting season in a manner to ensure nest and winter roost sites are more than ½ mile from downwind smoke effects.
- BE-7** Provide reasonable protective measures so fire prescription or fuels treatment will not consume dominant, large trees as identified by the Resource Advisor or qualified biologist approved by BLM within ½ mile of known nests and roosts of bald eagles. Pre-treatment efforts should provide reasonable protection of identified nesting and roosting trees (see Conservation Measure FT-4).

3.2.8 Mexican spotted owl (FT, CH)

- SO-1** BLM wildlife biologists will be involved early in the decision-making process for fuels management treatments (appropriately managed wildfires, prescribed fires, vegetation treatments) that are planned within suitable habitat or designated critical habitat for Mexican spotted owls (MSO).
- SO-2** Suitable habitat and designated critical habitat for MSO will be surveyed prior to implementing prescribed fire or vegetation treatment activities on BLM-administered lands to determine MSO presence and breeding status. These fire management activities will only be implemented within suitable or critical habitat if birds are not present. If a spotted owl is discovered during these surveys, BLM will notify the USFWS to reinitiate consultation and will determine any additional Conservation Measures necessary to minimize or eliminate impacts to the owl.
- SO-3** If a MSO is discovered during fire suppression or fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments), the Resource Advisor or a qualified wildlife biologist will document the find and assess potential harm to the owl and advise the Incident Commander or project crew boss of methods to prevent harm. The information will include for each owl the location, date, and time of observation and the general condition of the owl. The Resource Advisor or biologist will contact the appropriate USFWS office, and BLM will reinitiate consultation for the fire suppression or project activities.
- SO-4** Within MSO critical habitat designated on BLM-administered lands:
 - A)** To minimize negative effects on the primary constituent elements of critical habitat, appropriately managed wildfires, and prescribed fires will be managed primarily as low-intensity fires, with only scattered high-intensity patches. The BLM's objective will be to limit mortality of trees greater than 18 inches dbh to less than 5 percent, occasionally up to 10 percent, within critical habitat.
 - B)** If fireline construction is necessary during fire suppression, appropriately managed wildfires, or prescribed fires, BLM will minimize the cutting of trees and snags larger than 18 inches

dbh, and no trees or snags larger than 24 inches dbh will be cut unless absolutely necessary for safety reasons.

- C) For mechanical vegetation treatments within critical habitat, BLM will minimize the cutting of trees and snags larger than 18 inches dbh, and no trees or snags larger than 24 inches dbh will be cut unless absolutely necessary for safety reasons.
- D) Critical habitat disturbed during fire suppression or fuels treatment activities, such as fire lines, crew camps, and staging areas, will be rehabilitated to prevent their use by vehicles or hikers. Fire line rehabilitation will include pulling soil, duff, litter, woody debris, and rocks back onto the line to bring it up to grade and to make it blend in with the surrounding area. Such rehabilitation will be inspected one year after the event to ensure effectiveness.

SO-5 The following measures will be followed in suitable habitat (occupied or unoccupied) whenever consistent with objectives to reduce hazardous fuels:

- A) Manage mixed-conifer and pine-oak forest types to provide continuous replacement nest habitat over space and time (Table III.B.1 of the Recovery Plan for Mexican Spotted Owl).
- B) Incorporate natural variation, such as irregular tree spacing and various stand/patch sizes, into management prescriptions and attempt to mimic natural disturbance patterns.
- C) Maintain all species of native vegetation in the landscape, including early seral species. To allow for variation in existing stand structures and provide species diversity, both uneven-aged and even-aged systems may be used as appropriate.
- D) Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.
- E) Within pine-oak types, fuels treatment activities should emphasize retaining existing large oaks and promoting the growth of additional large oaks.
- F) Retain all trees >24 inches dbh.
- G) Retain hardwoods, large down logs, large trees, and snags.

Emphasize a mix of size and age classes of trees. The mix should include large mature trees, vertical diversity, and other structural and floristic characteristics that typify natural forest conditions.

SO-6 The effects of fire suppression and fuels treatment activities on MSO and their habitat, and the effectiveness of these Conservation Measures, will be assessed after each fire event or fuels treatment project by the Resource Advisor or local biologist to allow evaluation of these guidelines and to allow the USFWS to track the species environmental baseline. Prescriptions for appropriately managed wildfires, prescribed fires, and vegetation treatments will be adjusted, if necessary.

3.2.9 Yellow-billed cuckoo (FC)

YC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**).

3.3 Fish

The following Conservation Measure will be implemented for all Federally protected fish species that may be affected by the Proposed Action during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

FI-1 BLM will cooperate with other agencies to develop emergency protocols to decrease the impacts of fire suppression and fuels treatment activities on Federally listed fish species. Emergency protocols will include appropriate agency contacts, a list of facilities that can hold fish, sources of

equipment needed (e.g., sampling gear, trucks) and how to address human health and safety issues.

In addition to implementing **FI-1**, the following species-specific Conservation Measures will also apply:

3.3.1 Bonytail chub (FE,CH)

BC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) to eliminate adverse effects from fire management activities to available spawning habitat along shorelines (*i.e.*, occupied reaches and critical habitat).

3.3.2 Desert pupfish (FE,CH)

DP-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) for occupied reaches and critical habitat.

DP-2 Conduct prescribed burns such that no more than one-half of the watershed of each desert pupfish site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

DP-3 Monitor, where practical, for fish kill immediately following the first runoff event after prescribed fires in watersheds containing desert pupfish.

DP-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by desert pupfish.

3.3.3 Gila topminnow (FE)

GT-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**).

GT-2 Conduct prescribed burns such that no more than one-half of the watershed of each gila topminnow natural or reintroduction site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

GT-3 Monitor for fish kill, where practical, immediately following the first runoff event after prescribed fires in the watersheds containing gila topminnows.

GT-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila topminnow, when possible.

GT-5 Develop mitigation plans in coordination with the USFWS for each fuels management project (prescribed fire; vegetation treatments) that may adversely affect the gila topminnow. Mitigation plans for prescribed fire will limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.

GT-6 (Recommended) Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of gila topminnow from other resource program impacts.

3.3.4 Razorback sucker (FE, CH)

RS-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) to minimize adverse effects from fire management activities to available spawning habitat along shorelines (*i.e.*, occupied sites and critical habitat).

RS-2 Project boundaries for fire management activities will avoid or protect sensitive habitats of the razorback sucker.

3.3.5 Virgin River chub (FE, CH)

- VC-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) for the stretch of the Virgin River within Arizona.

3.3.6 Woundfin (FE, CH; Future 10(j) populations)

- WM-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) for the stretch of the Virgin River within Arizona.

3.3.7 Little Colorado spinedace (FT, CH)

- LS-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) to minimize adverse effects from fire management activities on BLM-lands to occupied reaches and critical habitat on adjacent lands.

3.3.8 Loach minnow (FT, CH); Spikedace (FT, CH)

- LM-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) for occupied reaches and critical habitat.
- LM-2** All reasonable efforts shall be made to minimize disturbance within the wetted areas of Aravaipa Creek or tributary channels.
- LM-3** No heavy equipment will be used off-road during wildfire suppression and fuels treatment projects within the wetted areas of Aravaipa Creek.
- LM-4** All reasonable efforts will be made to ensure that no pollutants, retardants, or chemicals associated with wildfire suppression and fuels treatment projects or activities enter surface waters of reaches occupied by these two fish species.
- LM-5** Develop mitigation plans in coordination with the USFWS for each fuels management project (prescribed fire; vegetation treatments) that may adversely affect the loach minnow and spikedace. Mitigation plans for prescribed fire will limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.
- LM-6 (Recommended)** Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Aravaipa Creek watershed), to protect populations of loach minnow and spikedace from other resource program impacts.

3.3.9 Gila chub (PE, Proposed CH)

- GC-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) for occupied reaches and proposed critical habitat.
- GC-2** When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila chub, when possible.
- GC-3 (Recommended)** Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of gila chub from other resource program impacts.

3.4 Flowering Plants

The following Conservation Measures for known locations and unsurveyed habitat of all Federally protected plant species within the planning area will be implemented during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire and vegetation treatment activities:

- PL-1** Known locations and potential habitat for plant populations will be mapped to facilitate planning for wildland fire use, prescribed fires, and vegetation treatments, and to ensure protection of these populations during fire suppression.
- PL-2** BLM will coordinate with FWS to delineate buffer areas around plant populations prior to prescribed fire and vegetation treatment activities. BLM will coordinate with USFWS during any emergency response and wildland fire use activities to ensure protection of plant populations from fire and fire suppression activities.
- PL-3** During fire suppression, wildland fire use, and prescribed fire in habitat occupied by Federally protected plant species, no staging of equipment or personnel will be permitted within 100 meters of identified individuals or populations, nor will off-road vehicles be allowed within the 100-meter buffer area, unless necessary for firefighter or public safety or the protection of property, improvements, or other resources (see **FS-7**). One of the primary threats to many of these plant species is trampling/crushing from personnel and vehicles.
- PL-4** No prescribed burning will be implemented within 100 meters of identified locations or unsurveyed suitable habitat for Federally protected and sensitive plant populations unless specifically designed to maintain or improve the existing population.

There are no additional species-specific conservation measures for the following Federally protected plant species: **Arizona Cliffrose** (*Purshia subintegra*), **Brady pincushion cactus** (*Pediocactus bradyi*), **Holmgren Milk Vetch** (*Astragalus homgreniorum*), **Nichol Turkís Head Cactus** (*Echinocactus horizonthalonius* var. *nicholii*), **Peebles Navajo Cactus** (*Pediocactus peeblesianus* var. *peeblesianus*), **Pima Pineapple Cactus** (*Coryphantha scheeri* var. *robustispina*), **Jones Cycladenia** (*Cycladenia humilis* var. *jonesii*), **Siler Pincushion Cactus** (*Pediocactus sileri*), **AcuOa Cactus** (*Echinomastus erectocentrus* var. *acunensis*), **Fickeisen Plains Cactus** (*Pediocactus peeblesianus* var. *fickeiseniae*).

3.4.1 Huachuca Water Umbel (*Lilaeopsis schaffneriana* var. *recurva*) [FE, CH]

In addition to implementing **PL-1** through **PL-4**, the following species-specific Conservation Measures will also apply:

- WU-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**).
- WU-2 (Recommended)** The BLM should fund additional surveys for the water umbel on BLM lands, and support research on the ecology of the species. Surveys may support the use of prescribed fire in areas not occupied by the Huachuca Water Umbel.

3.4.2 Kearneyís Blue Star (*Amsonia kearneyana*) [FE]

In addition to implementing **PL-1** through **PL-4**, the following species-specific Conservation Measures will also apply:

- KB-1** No mechanical or chemical vegetation manipulation will be authorized by BLM, and no planting or seeding of nonnative plants will occur in the Brown Canyon watershed within the Baboquivari allotment.
- KB-2** Planning and management for wildfire suppression in the watershed of Brown Canyon will be coordinated with the USFWS.

3.5 Mammals

3.5.1 Black-footed ferret (FE, 10(j) species)

If black-footed ferrets are discovered or re-established on public lands, then the following Conservation Measures will apply:

- BF-1** No heavy equipment operation off of existing roads within ½ mile of prairie dog towns having documented occurrence of black-footed ferrets.
- BF-2** No aerial retardant application within 300 feet of prairie dog towns having documented occurrence of black-footed ferrets.
- BF-3** No surface disturbance of prairie dog towns having documented occurrence of black-footed ferrets.
- BF-4** In Apache and Navajo counties, prairie dog complexes suitable for black-footed ferrets within ½ mile of proposed project sites will either be surveyed prior to project implementation or will be protected using measures **BF-1** through **BF-3**, as if ferrets were present.

3.5.2 Hualapai Mexican vole (FE)

- HV-1** All treatment areas will be surveyed for Hualapai Mexican vole occupancy prior to fuels management treatments (prescribed fire, vegetation treatments) in order to determine project modifications and/or avoidance and protection of occupied areas. Until surveyed, all potential vole habitat is considered occupied. Areas not considered suitable (e.g., areas dominated by thick pine needles and duff) will also be surveyed prior to treatment to protect existing snag habitat for potential future use by Mexican spotted owls.
- HV-2** Fuels management treatments (prescribed fire or vegetation treatments), construction of fire breaks, and/or staging areas for fire suppression or fuels management treatments will not be located within a vole use area. Occupied vole sites within proposed burn areas will be protected by firebreaks, precision ignition of fire around such sites, or total avoidance of the area. Fire plans will incorporate site-specific features (e.g., rock outcroppings, game trails, etc.), fire behavior, and professional judgment to determine the most appropriate method to protect occupied vole habitat. Additionally, monitoring of fuel moisture and use of the appropriate minimum impact suppression tactics will be used to reach the desired objective at each site.
- HV-3** To minimize impacts to Hualapai Mexican voles during the breeding season, prescribed burns and vegetation treatments in occupied or potential vole habitat will be implemented only between September 1 and March 15. Treatment in chaparral habitat will occur during the latter part of this time frame, in winter and/or early spring. These prescribed fires will follow the summer monsoon period to encourage additional herbaceous growth. Post-monsoon burns would help avoid the dry conditions that could result in extremely hot fires that reduce the recruitment of grasses and forbs. Areas not considered suitable for Hualapai Mexican voles (e.g., dominated by thick pine needles and duff) may be burned prior to September 1, if surveyed prior to treatment.
- HV-4** Provide a 75- to 100-foot, minimum, unburned vegetation buffer between fuels treatment sites and riparian and dry wash areas to decrease erosion into and sedimentation of the occupied or potentially occupied vole habitat. Within ponderosa pine treatment sites, use of dry washes as a

fire line may be appropriate and result in less disturbance than construction of a cup trench above the wash. Under such circumstances, BLM will prepare the wash as a fire line by raking duff and removing by hand dead branches and other debris.

- HV-5** The terms and conditions from the Pine Lake Wildland/Urban Interface Biological Opinion (BLM Kingman Field Office; Consultation No. 2-21-01-F-241) continue to apply to the Pine Lake project.

3.5.3 Jaguar (FE)

- JA-1** Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (Section 2.0) to eliminate adverse effects to jaguars that may occur in dense riparian habitats on BLM-administered lands.
- JA-2** Maintain dense, low vegetation in major riparian or xero-riparian corridors on BLM-administered lands in identified locations south of Interstate 10 and Highway 86. Locations will be identified in site-specific fire management plans.

3.5.4 Lesser long-nosed bat (FE)

- LB-1** Instruct all crew bosses (wildfire suppression, wildland fire use, prescribed fire, and vegetation treatments) in the identification of agave and columnar cacti and the importance of their protection.
- LB-2** Prior to implementing any fuels treatment activities (prescribed fire, vegetation treatments), pre-project surveys will be conducted for paniculate agaves and saguaros that may be directly affected by fuels management activities.
- LB-3** Protect long-nosed bat forage plants -- saguaros and high concentrations of agaves -- from wildfire and fire suppression activities, and from modification by fuels treatment activities (prescribed fire, vegetation treatments), to the greatest extent possible. Agave concentrations are contiguous stands or concentrations of more than 20 plants per acre. Avoid driving over plants, piling slash on top of plants, and burning on or near plants. Staging areas for fire crews or helicopters will be located in disturbed sites, if possible.
- LB-4** No seeding/planting of nonnative plants will occur in any wildfire rehabilitation site or fuels treatment site with paniculate agaves or saguaros.
- LB-5** A mitigation plan will be developed by the Bureau in coordination with the USFWS for prescribed fires or fuels management projects (mechanical, chemical, biological treatments) within 0.5 mi of bat roosts or in areas that support paniculate agaves or saguaros. The mitigation plan will ensure that effects to bat roosts and forage plants are minimized and will include monitoring of effects to forage plants. The plan will be approved by the USFWS.
- LB-6 (Recommended)** BLM personnel should examine concentrations of agaves (including shindagger ñ *A. schottii*) within each proposed fuels treatment area, and blackline or otherwise protect from treatments any significant concentrations of agaves that appear to be amidst fuel loads that could result in mortality greater than 20 percent (>50% for *A. schottii*). BLM personnel should use their best judgment, based on biological and fire expertise, to determine which significant agave stands are prone to mortality greater than 20 percent (>50% for *A. schottii*) (see Conservation Measures FT-1 and FT-3).
- LB-7 (Recommended)** BLM should continue to support and cooperate in the investigations of agave relationships to livestock grazing, and of the effects of prescribed fire on paniculate agaves.

3.5.5 Mexican gray wolf (FE; 10(j) species)

If Mexican gray wolves are re-established on public lands, then the following Conservation Measures will apply:

- GW-1** No human disturbance associated with fire management activities will be within one mile of a den site from April 1 to June 30.
- GW-2** No human disturbance associated with fire management activities will be within one mile of known rendezvous sites from April 1 to June 30.

3.5.6 Ocelot (FE)

No species-specific Conservation Measures developed.

3.5.7 Sonoran pronghorn (FE)

No species-specific Conservation Measures developed.

3.5.8 Black-tailed prairie dog (FC)

If black-tailed prairie dogs are re-established on public lands, then the following Conservation Measures will apply:

- PD-1** No heavy equipment operation off of existing roads within ½ mile of black -tailed prairie dog colonies
- PD-2** No aerial retardant application within ½ mile of black -tailed prairie dog colonies.
- PD-3** No surface disturbance of black-tailed prairie dog colonies.

3.6 Reptiles

3.6.1 Desert tortoise, Mojave population (FT)

- DT-1** Take appropriate action to suppress all wildfires in desert tortoise habitat, based on preplanned analysis and consistent with land management objectives, including threats to life and property. Full suppression activities will be initiated within key desert tortoise habitat areas identified in site-specific Fire Management Plans.
- DT-2** Suppress all wildfires in desert tortoise habitat with minimum surface disturbance, in accordance with the guidelines in Duck et al. (1995) and the 1995 programmatic biological opinion on fire suppression on the Arizona Strip (2-21-95-F-379).
- DT-3** Pre-position suppression forces in critical areas during periods of high fire dangers.
- DT-4** As soon as practical, all personnel involved in wildfire suppression (firefighters and support personnel) will be briefed and educated about desert tortoises and the importance of protecting habitat and minimizing take, particularly due to vehicle use. Fire crews will be briefed on the desert tortoise in accordance with Appendix II of Duck et al. (1995).
- DT-5** If wildfire or suppression activities cannot avoid disturbing a tortoise, the Resource Advisor or monitor will relocate the tortoise, if safety permits. The tortoise will be moved into the closest suitable habitat within two miles of the collection site that will ensure the animal is reasonably safe from death, injury, or collection associated with the wildfire or suppression activities. The qualified biologist will be allowed some discretion to ensure that survival of each relocated

tortoise is likely. If the extent or direction of movement of a fire makes sites within two miles of the collection site unsuitable or hazardous to the tortoise or biologists attempting to access the area, the tortoise may be held until a suitable site can be found or habitat is safe to access and not in immediate danger of burning. The Resource Advisor will contact the USFWS Arizona Ecological Services Field Office (AESFO) as soon as possible concerning disposition of any animals held for future release. Desert tortoises will not be placed on lands outside the administration of the Federal government without the written permission of the landowner. Handling procedures for tortoises, including temporary holding facilities and procedures, will adhere to protocols outlined in Desert Tortoise Council (1994).

- DT-6** Upon locating a dead, injured, or sick desert tortoise, initial notification must be made to the appropriate USFWS Law Enforcement Office within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph, and any other pertinent information. The notification will be sent to the Law Enforcement Office with a copy to the AESFO
- DT-7** Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. If possible, the remains of intact desert tortoises will be placed with educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above will be obtained and the carcass left in place. Arrangements regarding proper disposition of potential museum specimens will be made with the institution prior to implementing the action. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should any treated desert tortoise survive, the USFWS should be contacted regarding final disposition of the animal.
- DT-8** The Resource Advisor or monitor(s) will maintain a record of all desert tortoises encountered during fire suppression activities. This information will include for each desert tortoise: 1) locations and dates of observation; 2) general condition and health, including injuries and state of healing, and whether animals voided their bladders; 3) location moved from and to; and 4) diagnostic markings (i.e., identification numbers of marked lateral scutes). No notching of scutes or replacement of fluids with a syringe is authorized.
- DT-9** Prior to moving a vehicle, personnel will inspect under the vehicle for tortoises. If a tortoise is found under the vehicle, the tortoise will be allowed to move away from the vehicle on its own accord, if possible. Otherwise an individual will move the tortoise to a safe locality in accordance with **FS-2** and **DT-5**.
- DT-10** Off-road vehicle activity will be restricted to the minimum necessary to suppress wildfires. Vehicles will be parked as close to roads as possible, and vehicles will use wide spots in roads or disturbed areas to turn around. Whenever possible, a biologist or crewperson trained to recognize tortoises and their shelter sites will precede any vehicle traveling off-road to direct the driver around tortoises and tortoise burrows. Whenever possible, local fire-fighting units should provide direction and leadership during off-road travel because of their expertise and knowledge of area sensitivities.
- DT-11** Fire-related vehicles will drive slow enough to ensure that tortoises on roads can be identified and avoided.
- DT-12** Fire crews or rehabilitation crews will, to the extent possible, obliterate off-road vehicle tracks made during fire suppression in tortoise habitat, especially those of tracked vehicles, to reduce future use.
- DT-13** To the maximum extent practical, campsites, aircraft landing/fueling sites, and equipment staging areas will be located outside of desert tortoise habitat or in previously disturbed areas. If such facilities are located in desert tortoise habitat, 100 percent of the site will be surveyed for desert tortoises by a qualified biologist approved by BLM, whenever feasible. Any tortoises found will be moved to a safe location in accordance with **FS-2** and **DT-5**. All personnel located at these facilities will avoid disturbing active tortoise shelter sites.

- DT-14** Elevated predation by common ravens or other predators attributable to fire suppression activities will be reduced to the maximum extent possible. Work areas, including campsites, landing/fueling sites, staging areas, etc. will be maintained in a sanitary condition at all times. Waste materials at those sites will be contained in a manner that will avoid attracting predators of desert tortoises. Waste materials will be disposed of at an appropriate waste disposal site. iWasteî means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
- DT-15** Backfiring operations are permitted where necessary in desert tortoise habitat. Burning out patches of identified habitat within or adjacent to burned areas is not permitted as a standard fire suppression measure unless necessary for firefighter or public safety or to protect property, improvements, or natural resources.
- DT-16** Use of foam or retardant is authorized within desert tortoise habitat.
- DT-17** Rehabilitation of vegetation in tortoise habitat will be considered, including seeding, planting of perennial species, etc.
- DT-18** Recovery of vegetation will be monitored, including establishing and monitoring paired plots, inside and outside burned areas in tortoise habitat. Recovery plans will be coordinated with the USFWS and AGFD.
- DT-19** The effectiveness of wildfire suppression activities and desert tortoise Conservation Measures will be evaluated after a wildfire. Procedures will be revised as needed.

3.6.2 New Mexico ridgenose rattlesnake (FT)

- RN-1** To the extent possible, minimize surface disturbing activities from fire suppression and fuels treatment activities within New Mexico ridgenose rattlesnake habitat on BLM-administered lands in the southern Peloncillo Mountains, particularly during active periods for snakes (July through October).
- RN-2** Prior to using wildland fire for resource benefit, cool season (November ñ March) prescribed fire or other fuel treatments should be used to reduce unnatural fuel loads within suitable habitat to avoid catastrophic fires and loss of canopy cover.
- RN-3** All fires that occur outside of prescriptions that will result in low intensity, low severity burns will be fully suppressed within or near suitable New Mexico ridge-nose rattlesnake habitat.

3.7 Conservation Agreement and Management Plan Species

3.7.1 Flat-tailed horned lizard

No species-specific Conservation Measures developed.

3.7.2 Paradine (Kaibab) plains cactus

Implement **PL-1** and **PL-2** to protect known locations during fire suppression to the extent possible and during the fuels treatment activities.

3.7.3 Virgin spinedace

Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (**Section 2.0**) for the stretch of the Virgin River within Arizona.

3.7.4 Desert tortoise, Sonoran population

Implement the Conservation Measures for Desert Tortoise, Mojave population, as appropriate, for fire suppression and fuels treatment activities (prescribed fire, vegetation treatments), excluding requirements for notification to USFWS.

REFERENCE:

Duck, T.A., T.C. Esque, and T.J. Hughes. 1995. Fighting wildfire in desert tortoise habitat: considerations for land managers. *Proc. Desert Tortoise Council. Symp.* 1994:58-67.